## REMARKS/ARGUMENTS

I. Introduction:

Claims 1, 2, 5, 11, 16, 17, and 28 are amended herein. Claims 1-28 are currently pending.

II. Claim Rejections - 35 U.S.C. 101:

Claim 28 has been amended in the form of an independent claim directed to a computer readable medium encoded with a computer program. As amended, claim 28 is believed to comply with the requirements of 35 U.S.C. 101.

III. Claim Rejections - 35 U.S.C. 112:

Claims 1, 2, 5, 11, 16, and 17 have been amended to replace "and/or" with --or--. As amended, claims 1, 2, 5, 11, 16, and 17 are believed to comply with the requirements of 35 U.S.C. 112.

IV. Claim Rejections - 35 U.S.C. 103:

Claims 1, 5, 10, and 23-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,068,630 (San Filippo) in view of PCT Patent Application WO 96/19905 (Peterson et al.) (referred to by the Examiner as "Maynard et al.").

San Filippo is directed to a method for measuring load between MCDN devices for use in determining the path with optimal throughput. A local node measures its own load and communicates its load to its neighboring nodes, which communicate their loads to the local node. The portion of load attributed by each node to the total load on a link between nodes is subtracted from the load value to obtain a measurement. As noted by the

Examiner, San Filippo does not derive a traffic flow model for a modified scenario using a plurality of constraints describing the interdependency of an initial to a modified scenario or calculate values or upper and lower bounds of traffic values for the modified scenario from the traffic flow model using the input data.

Peterson et al. is directed to a statistically robust traffic modeling method and apparatus. The system determines channel allocations which represent limits on communication channel access and conforms operations of the system to the channel allocations. In rejecting the claims the Examiner refers to the flowchart shown in Fig. 6 and described at page 7 of Peterson et al. The flowchart illustrates a method of operating a communication system based on a traffic prediction. The system first collects satellite traffic data at step 102. From this data, a totality of call attempts during a particular time interval is determined. The traffic data is thus call attempts rather than traffic data measurements through nodes or links, as set forth in the claims.

Peterson et al. do not show or suggest deriving a traffic flow model for a modified scenario using a plurality of constrains describing the interdependency of an initial to a modified scenario, as set forth in claim 1. The Examiner refers to steps 102 and 104 of Fig. 6, with respect to these limitations. At step 104, a generate traffic model process uses the traffic data collected at step 102 to predict the number of users which should access the communication system during future time interfaces in particular areas. Thus, Peterson et al. do not derive a traffic flow model for a modified scenario. Instead, Peterson et al. simply use the collected data to predict a number of users that should access the system. Since there is no modified scenario in Peterson et al., there are no constraints describing the interdependency of an initial to a modified scenario.

Furthermore, Peterson et al. do not teach calculating values or upper and lower bounds of traffic values for a modified scenario from a traffic flow model using input data. As noted above, there is no modified scenario in Peterson et al. Channel allocations are determined at step 106 of Peterson et al. using the predicted values. At step 108 the calculated channel allocations are transmitted to each satellite. In contrast to the claimed invention, Peterson et al. use actual data to predict a future number of call attempts. The

channel allocations are made based on the actual call attempts rather than a modified scenario.

Applicant's invention is particularly advantageous in that the system can be used to calculate traffic values in a communications network for a modified scenario using measured traffic data of the initial network. By deriving constraints from the interdependency of the initial and modified network, actual traffic data can be used in the calculation for the modified scenario if they are not affected by the modifications. In this way, either exact values or relatively tight bounds can be derived for the desired traffic values in a modified network. Furthermore, the system can be used to analyze a whole set of modifications. This is useful, for example, for a resilience analysis of a communications network where a service provider might want to ensure that the network has enough capacities to deal with the failure of one or more links.

Accordingly, claim 1 is submitted as patentable over the references cited.

Claims 2-16, depending either directly or indirectly from claim 1, are submitted as patentable for at least the same reasons as claim 1.

Claims 6-7, 9, 11-12, and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over San Filippo in view of Peterson et al. and further in view of U.S. Patent No. 6,404,744 (Saito).

The Saito patent is directed to a method for designing a communication network. In rejecting claim 6, the Examiner refers to an optimization step in the flowchart of Fig. 2 of Saito. There is no teaching of correcting input data if inconsistencies are detected. With regard to claims 7 and 9, the Examiner refers to the Background in Saito, which merely describes an optimization section that solves a linear programming problem generated by an optimization reference generator to determine the capacities of the paths and links. The Examiner has failed to point to any teaching of solving a linear programming problem with a linear objective function to minimize data traffic reconciliation (error correction), as set forth in claim 7, or traffic values in a modified

scenario expressed as a linear function of node-to-node flows in an initial scenario, as set forth in claim 9.

Claims 2-3, 8, 15, 17, 25-26, and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over San Filippo in view of Peterson et al. and further in view of U.S. Patent No. 6,594,268 (Aukia et al.).

Aukia et al. describe an adaptive routing system and method for QoS packet networks. With regard to claim 2, the Examiner refers to col. 14, lines 45-52, which describes how control packets may be configured to allow for collection of additional features of network topology information. There is no teaching of a modified scenario comprising one or more of a modified network topology, modified routing algorithm parameters, modified traffic engineering constraints, or modified traffic load compared to an initial scenario, as set forth in claim 2. The additional network topology information collected in Aukia et al. is for the current network traffic.

With regard to claim 8, the Examiner refers to col. 26, lines 15-19, which describes a formula for determining network sensitivities with respect to maximized revenue. There is no teaching of solving a linear programming problem with a non-linear object function to minimize data traffic reconciliation (error correction) as set forth in claim 8.

In rejecting claim 15, the Examiner refers to Fig. 1 and Table 2 of Aukia et al. Fig. 1 illustrates a network employing adaptive routing. Table 2 show exemplary QoS provisioning commitments associated with a class field for a router. The Examiner has failed to point to any teaching of solving a first linear programming problem by computing the upper bound of traffic flow values from a first to a second node or solving a linear programming problem by computing the lower bound of traffic flow values from the first to the second set of nodes. Table 2 of Aukia et al. simply show variables at a router for a maximum number of packets that may be sent before a refresh of a token bucket, maximum rate of packet flow, and minimum and maximum packet size.

Claims 17, 26, and 28 are submitted as patentable over San Filippo and Peterson et al. for at least the reasons discussed above with regard to claim 1. For example, neither

reference shows or suggests a modified scenario as set forth in claims 17 and 28. As noted by the Examiner, there are a number of other limitations in these claims that are not disclosed by San Filippo or Peterson et al. Aukia et al. do not overcome the deficiencies of the primary references.

Claim 25 is further submitted as patentable over the cited references which do not show or suggest calculating one consistent solution for all solution variables taking into account all modifications. As previously discussed, the cited references do not disclose a modified scenario. Thus, there is no solution taking into account modifications. Furthermore, there is no teaching of calculating a consistent solution for all solution variables.

The other references cited, including U.S. Patent Nos. 7,206,289 (Hamada), 7,111,074 (Basturk), 5,043,027 (Takase et al.), and 7,047,309 (Baumann et al.), do not overcome the deficiencies of the primary references.

V. Conclusion:

For the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,

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